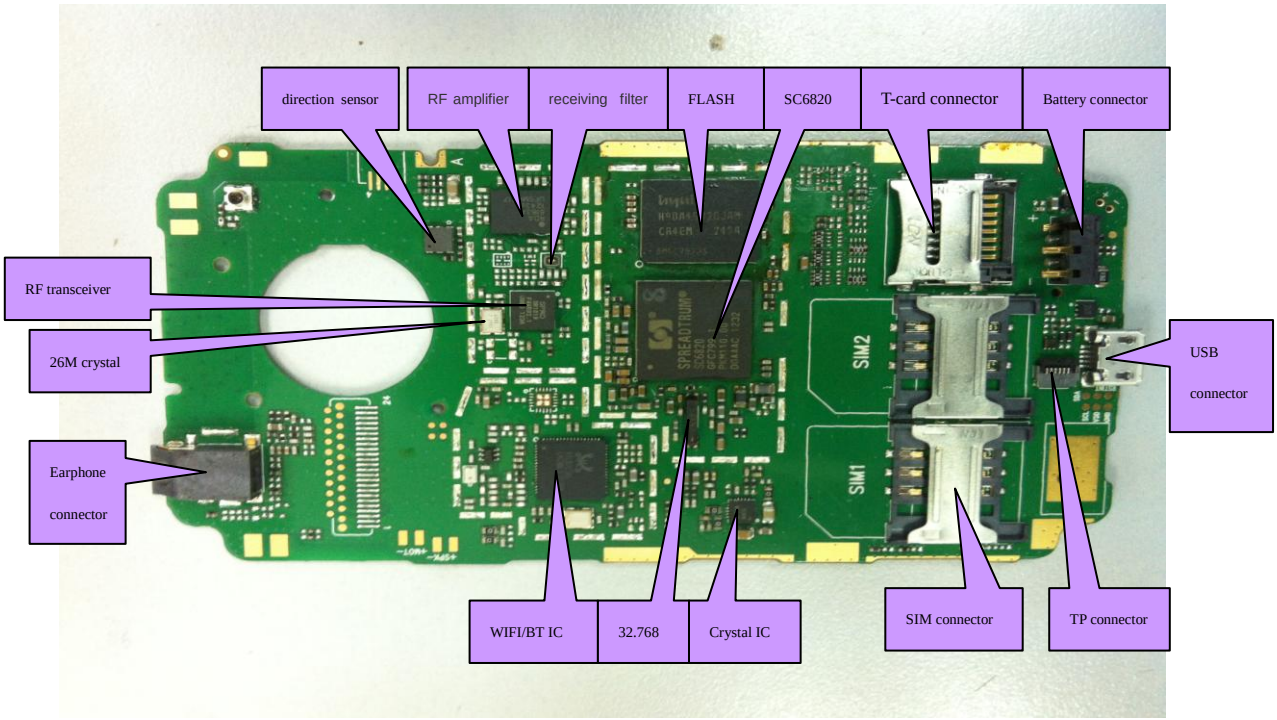
A27 Service Manual

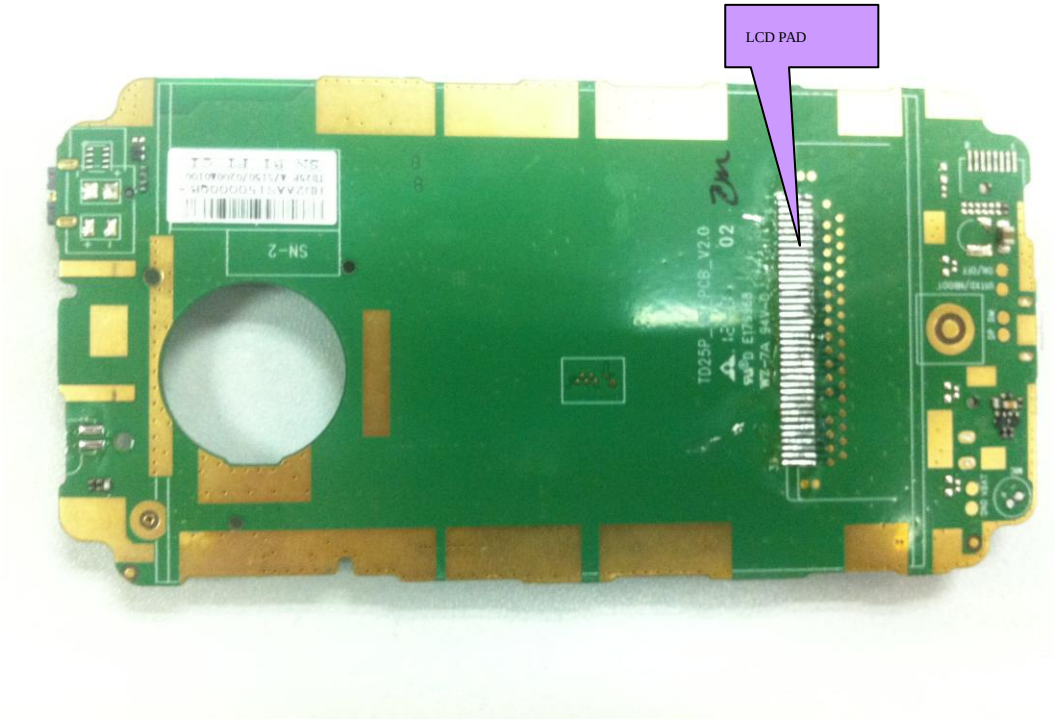
Table of Contents

1. Circuit diagram instruction 3
   1.1 Main board explored view 3
   1.2 Detailed Description of Circuit Chart 4
   1.3 RF circuit 4
   1.4 Base band circuit 5
   1.5 Function circuit 5
2. Fault maintenance 6
3. Trouble shooting and flow chart 8
   3.1 Unable to power on the handset 8
   3.2 No ring tone 9
   3.3 LCD display fault 10
   3.4 Charging fault 11
   3.5 Camera fault 12
   3.6 Fail to identify SIM card 13
   3.7 MIC fault 14
   3.8 Keypad fault 15
   3.9 Receiver fault 16
   3.10 Vibrate fault 17
   3.11 FM fault 18
   3.12 Bluetooth fault 19
   3.14 No signal 20
   3.15 Failure to identify T-flash card 21
   3.16 Earphone fault 22
   3.17 Unable to use USB 23

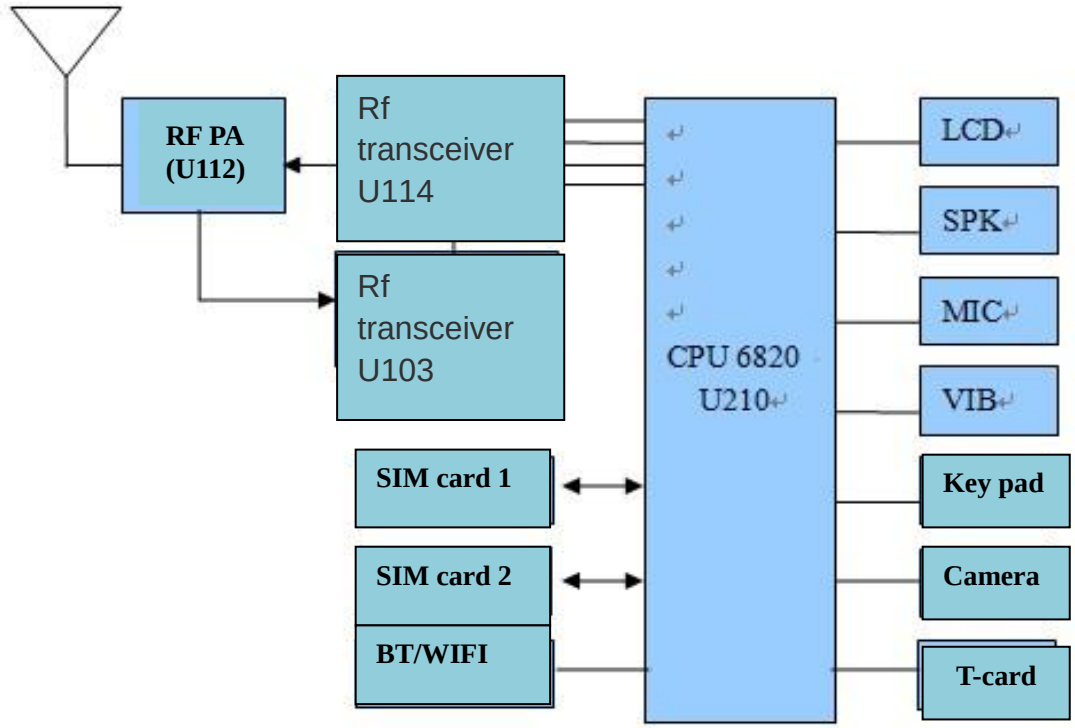
1. Circuit diagram instruction

.1 Main board explored view





1.2 Detailed Description of Circuit Chart



1.3 RF circuit

This phone is designed on SC6820 platform. RF main chip integration SR1019, PA use RDA6163A, TCXO uses 26MHz crystal oscillator.

(1) Receiving circuit

The GSM or DCS signal received from a base station via antenna is inputted from the pin 27 of U101, send U104/U105 to pin A20/B20/A19/B19. This chip integrates LNA and Frequency mixer. The signals are amplified by their own low-noise amplifier (LNA). The amplified signal is sent to a down converter, where the signal is mixed with local oscillation (LO) output from RX VCO to generate zero intermediate frequency (ZIF) signals. The zero-IF signal passes through a filter and is amplified by programmable gain amplifier (PGA), then the signal is outputted to I and Q demodulator to generate I/Q base band signals.

(2) Transmitting circuit

A transmitter consists of I/Q modulation circuit, up-conversion mixer circuit,

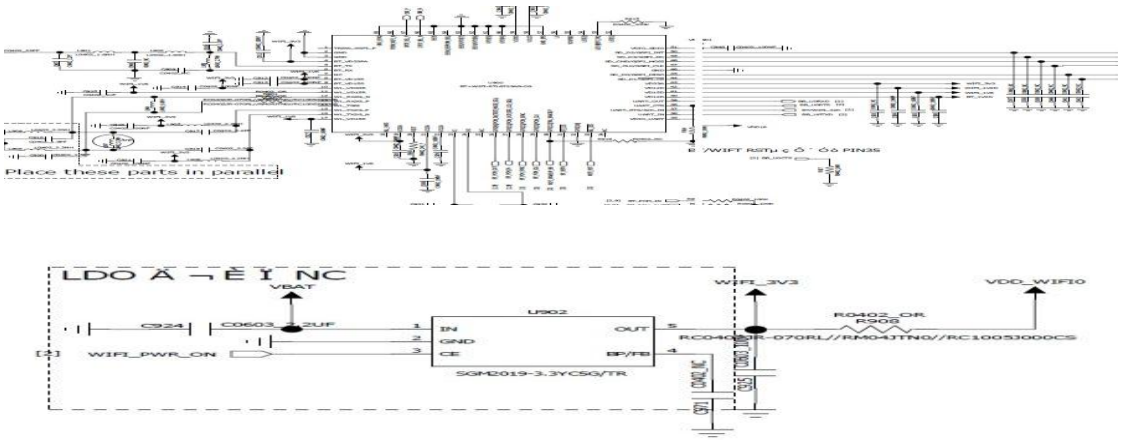
power amplifier and duplex switch. The I/Q signal is inputted to be performed signal modulation as the modulation signal. The modulated TXIF signals restrain its third harmonic by harmonic suppression filter. The follow-up TXIF signal will be sent to a discriminator on the offset frequency phase lock loop (OPLL). Then perform frequency discrimination to this signal and the mixed signal of TXVCO signal and RFVCO output signal. The discriminator outputs the signal control RFVCO and RFVCO phase is enabled to lock at the phase of TXIF signal. TXVCO output RF is still decided by RFVCO frequency. The phases of RFVCO and IFVCO signals lock at the phase of VCTXO reference signal. TXVCO output signal is sent to emission power amplifier (PA) A17/A16 pin to amplify. The TX signal outputted by PA pin 27is transmitted to the antenna via antenna switch to launch.

1.4 Base band circuit

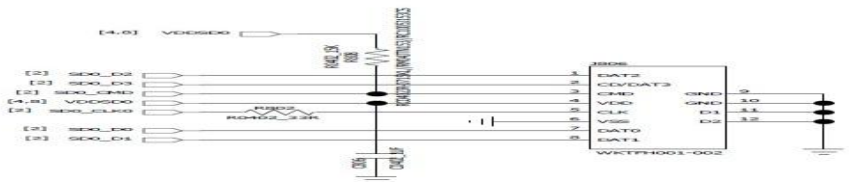
Base band main chip adopts SC6820 chip.

1.5 Function circuit

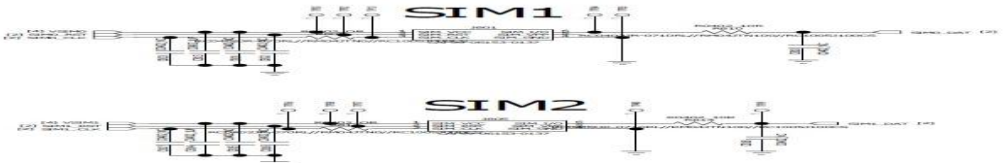
WIFI/BT



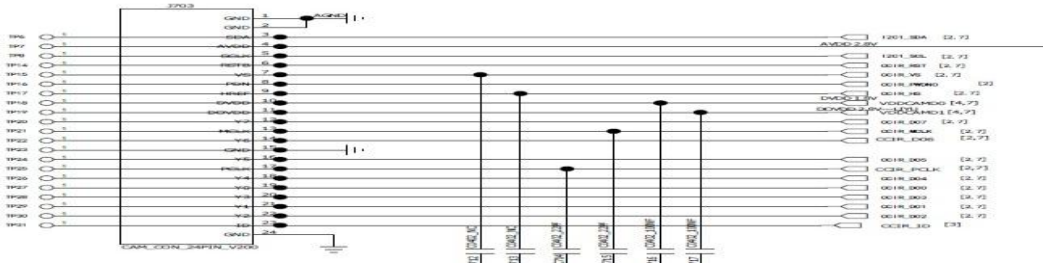
T card



SIM card



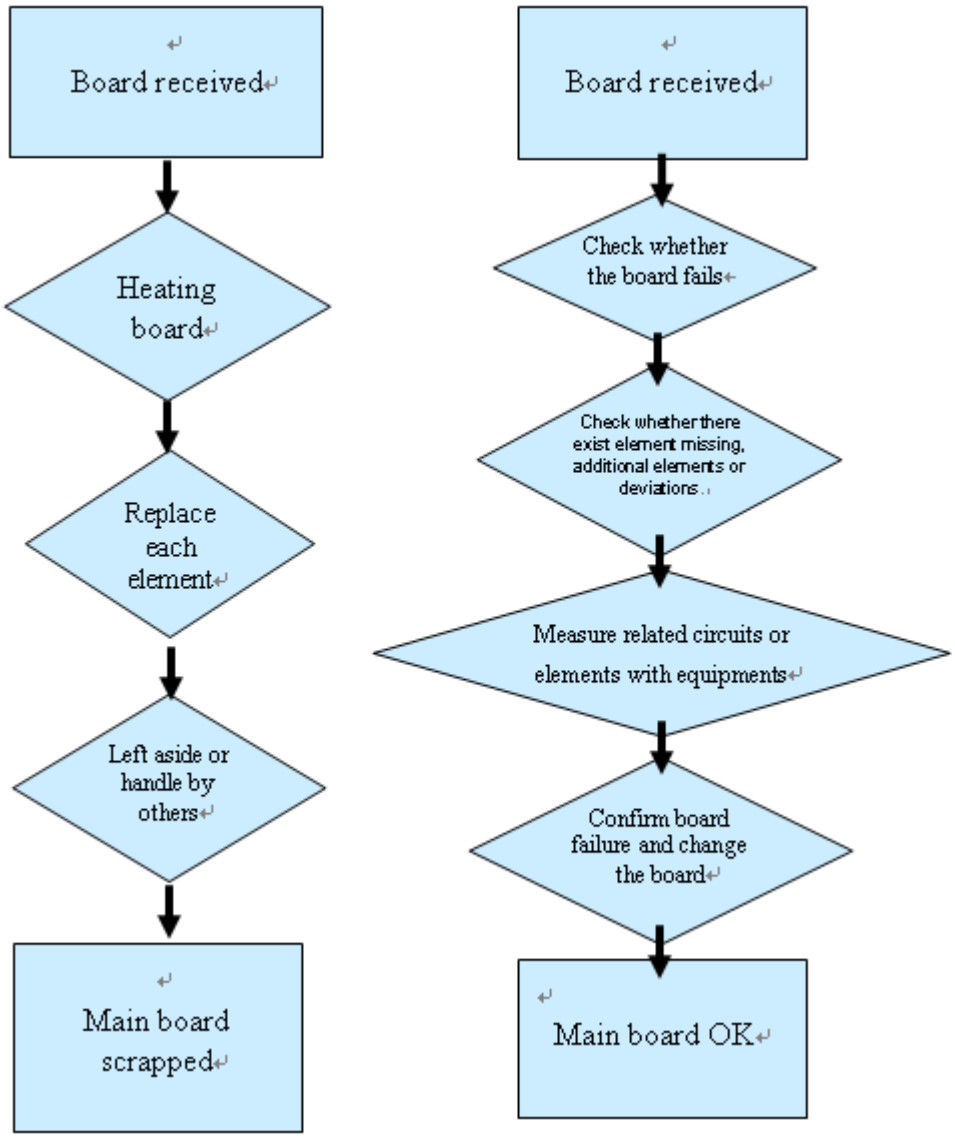
Camera



2. Fault maintenance

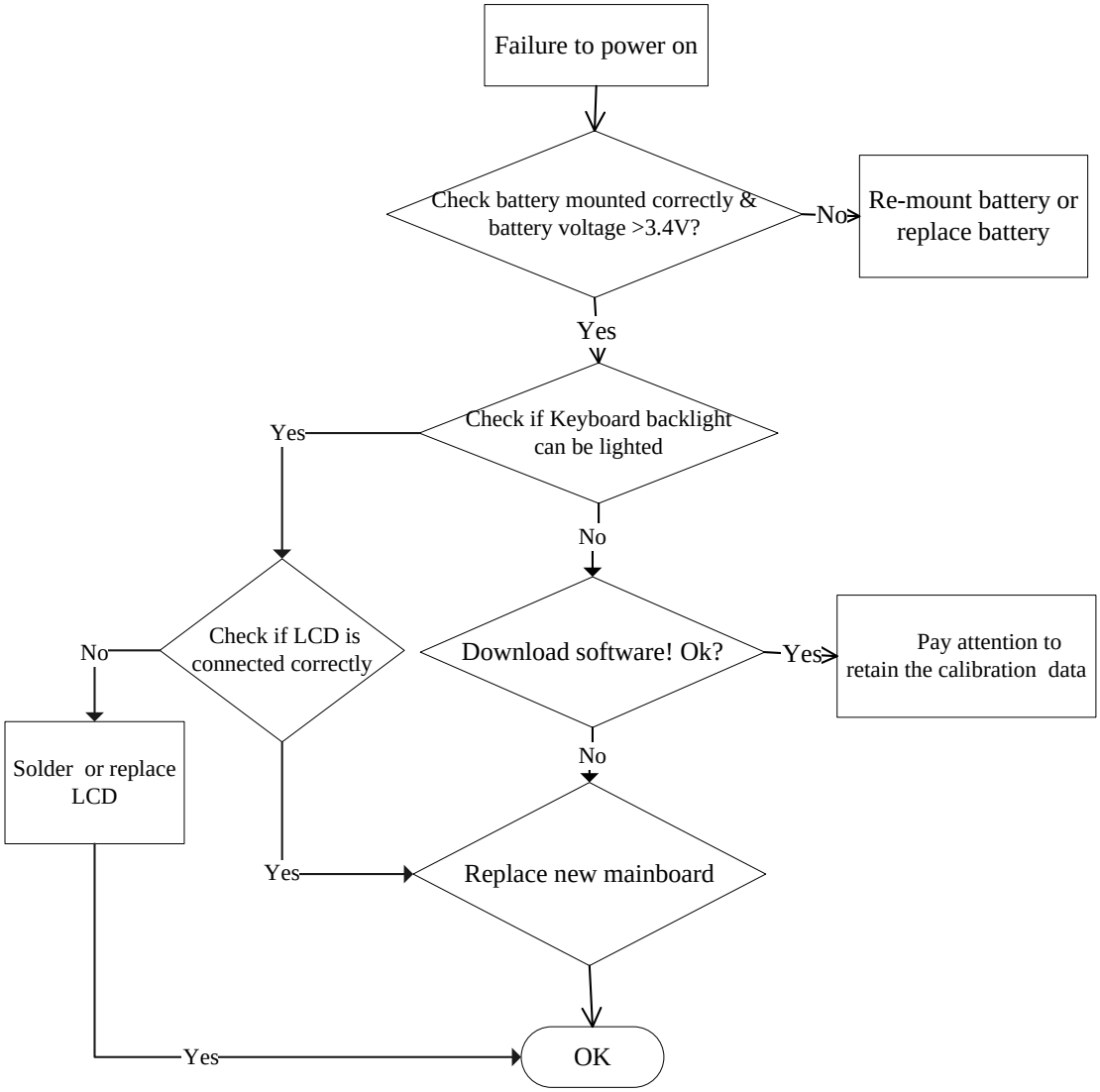
Note:

The PCBA repairing is a very important work during the final production of cellular phones. The speed and quality of repairing decides the yield and production efficiency. The repair idea is very important for a good repairing technician. Make sure not to heat a board right away once a phone reaches at hand.

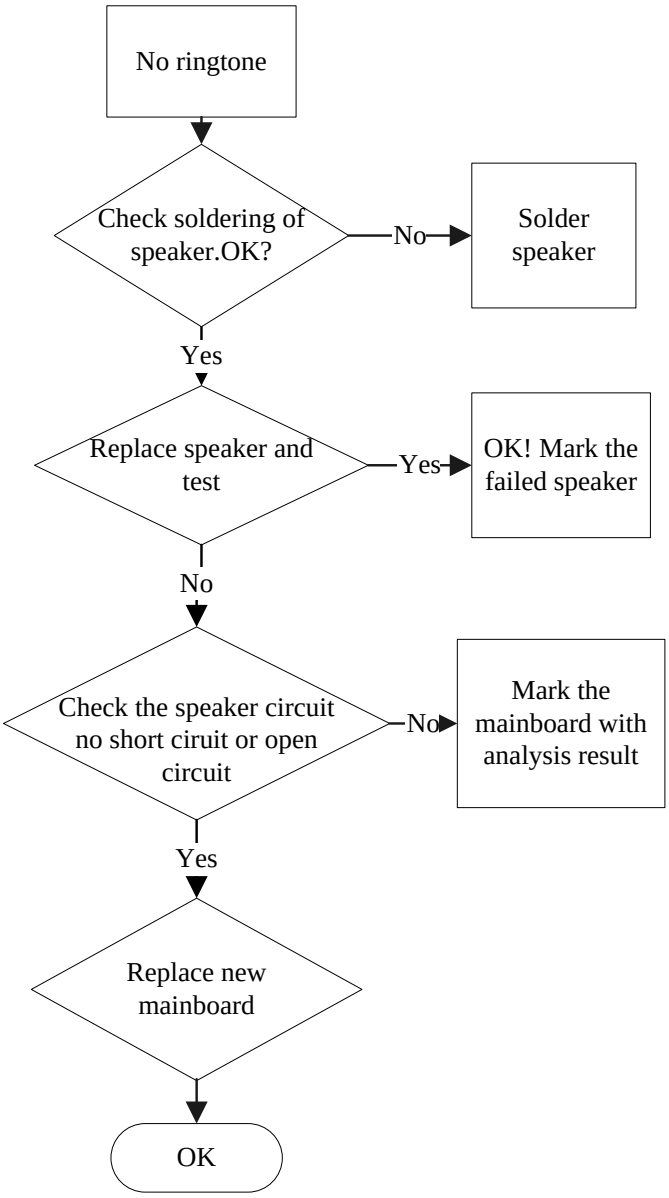

Board received
Heating board
Replace each element
Left aside or handle by others
Main board scrapped
Board received
Check whether the board fails
Check whether there exist element missing, additional elements or deviations
Measure related circuits or elements with equipments
Confirm board failure and change the board
Main board OK

3 Trouble shooting and flow chart

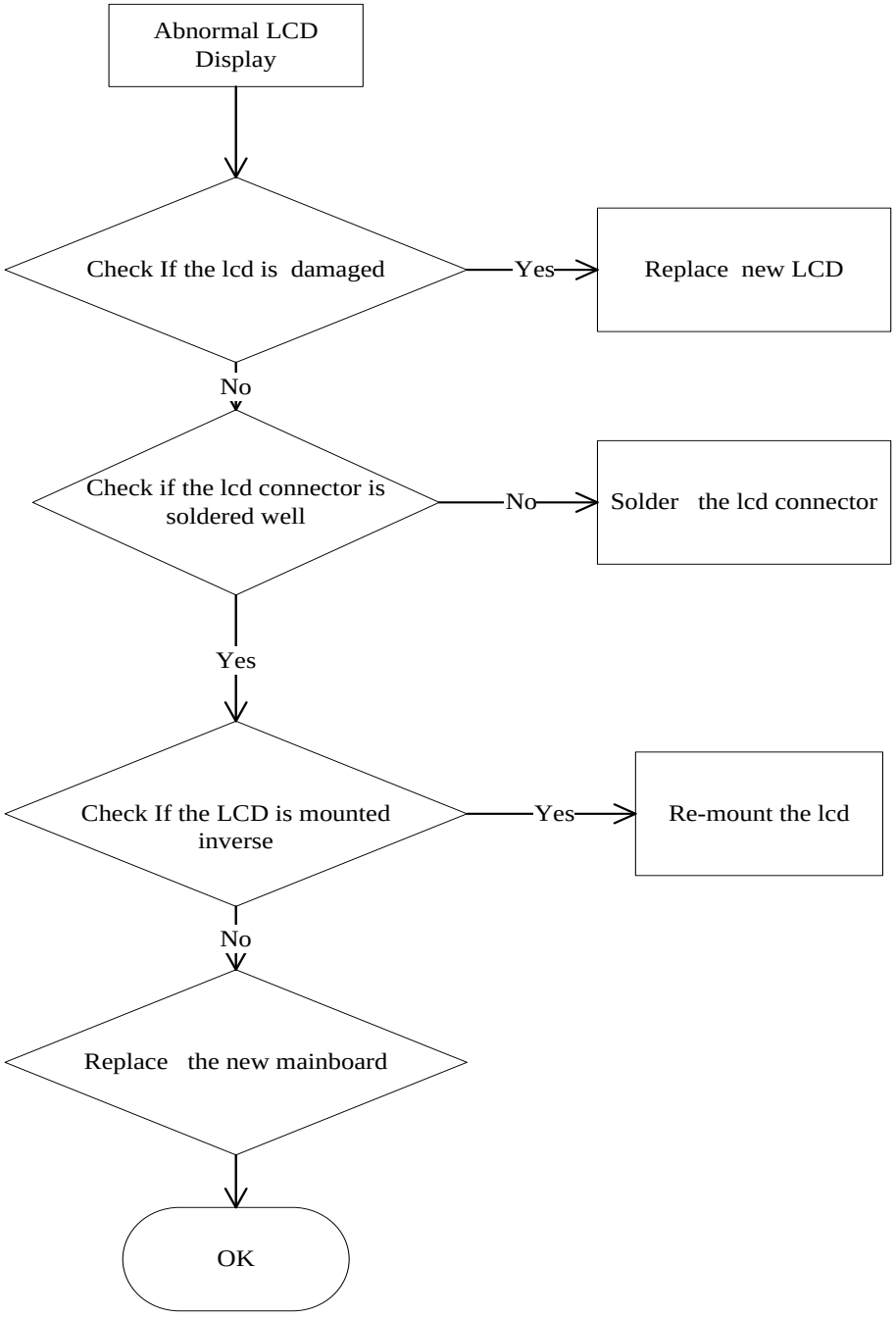
3.1 Unable to power on the handset



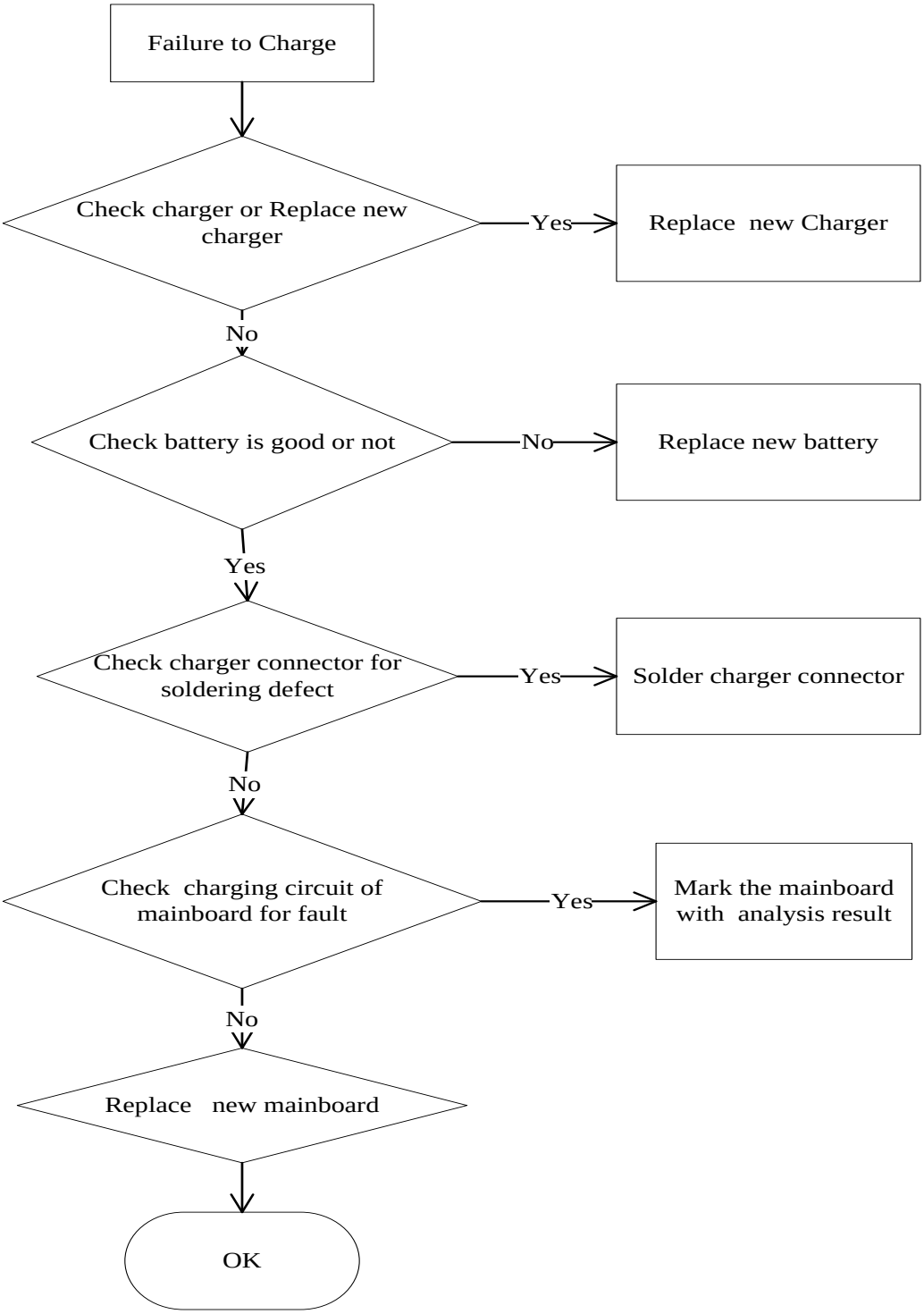
3.2 No ring tone



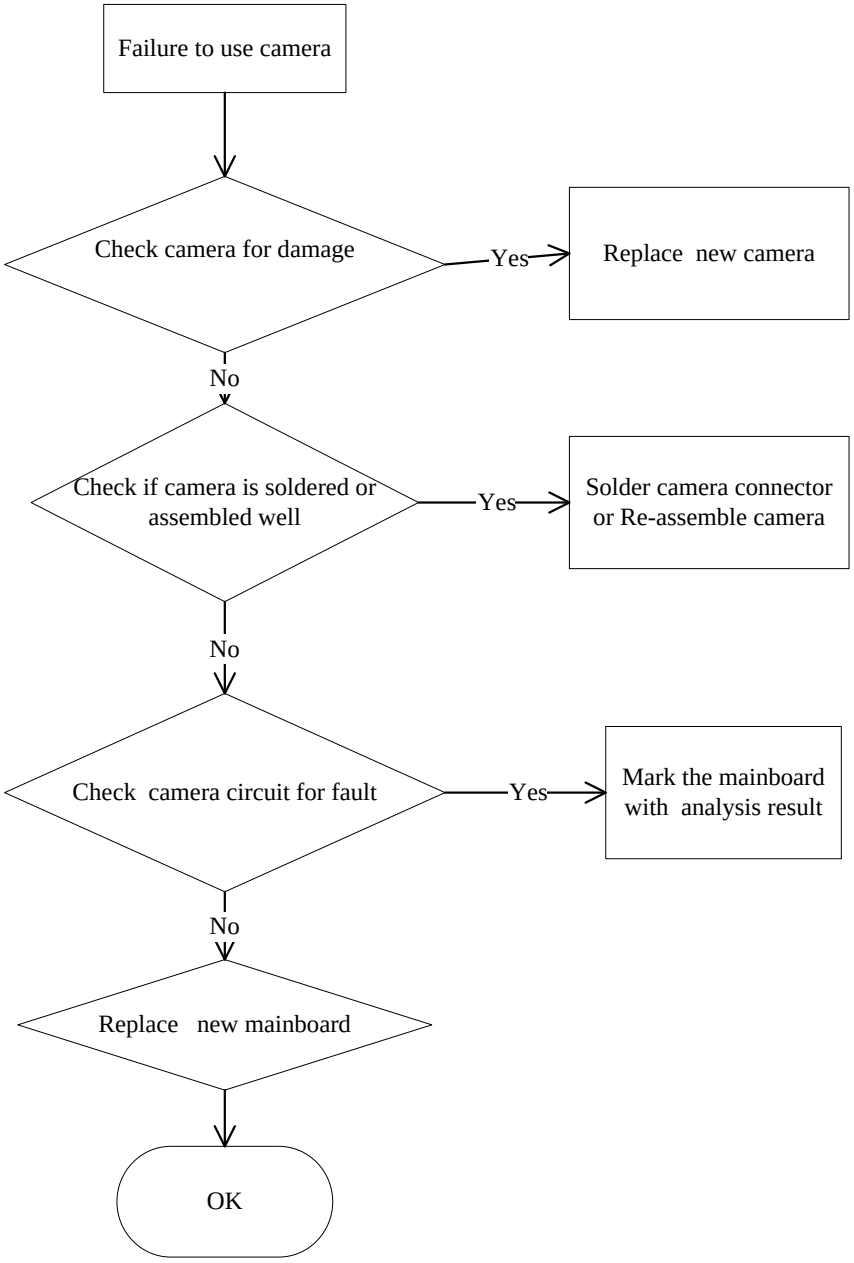
3.3 LCD display fault



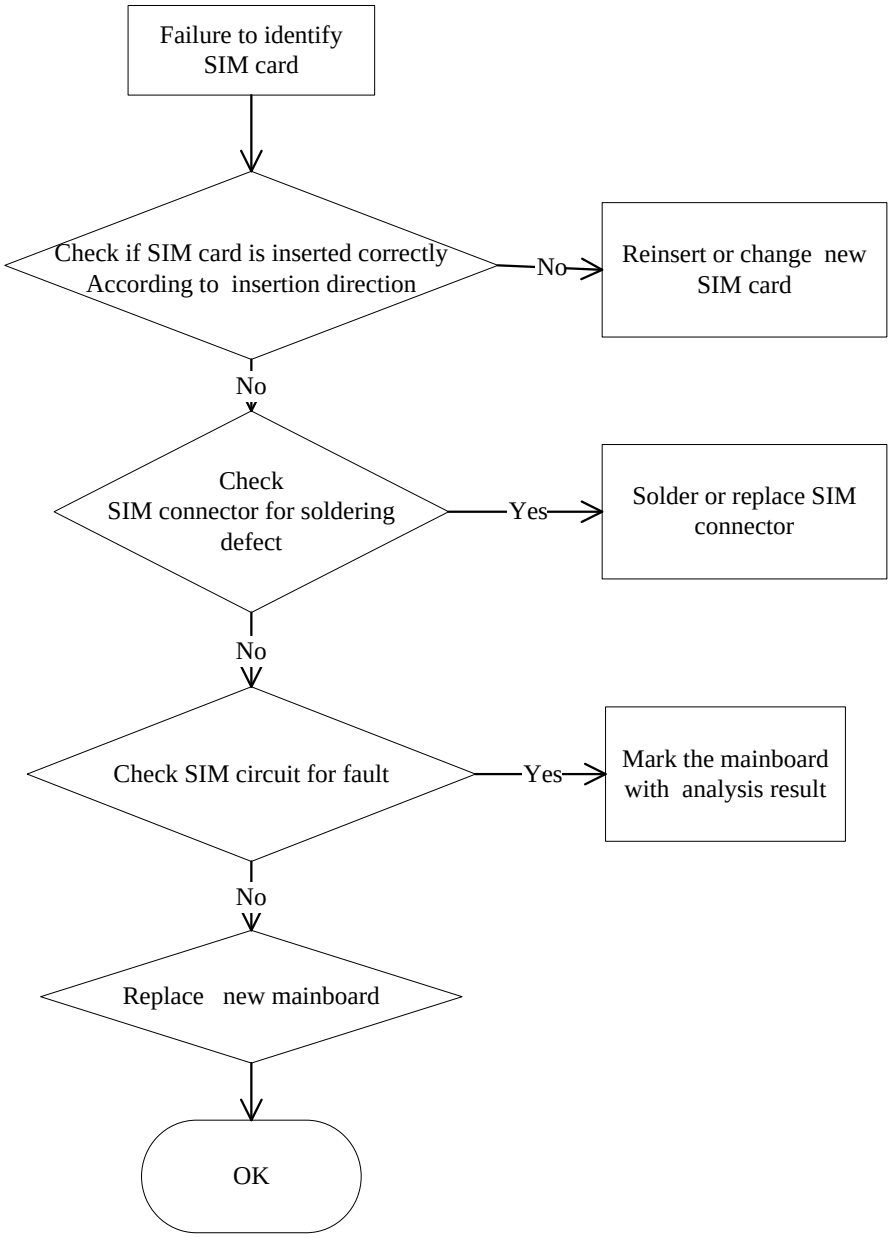
3.4 Charging fault



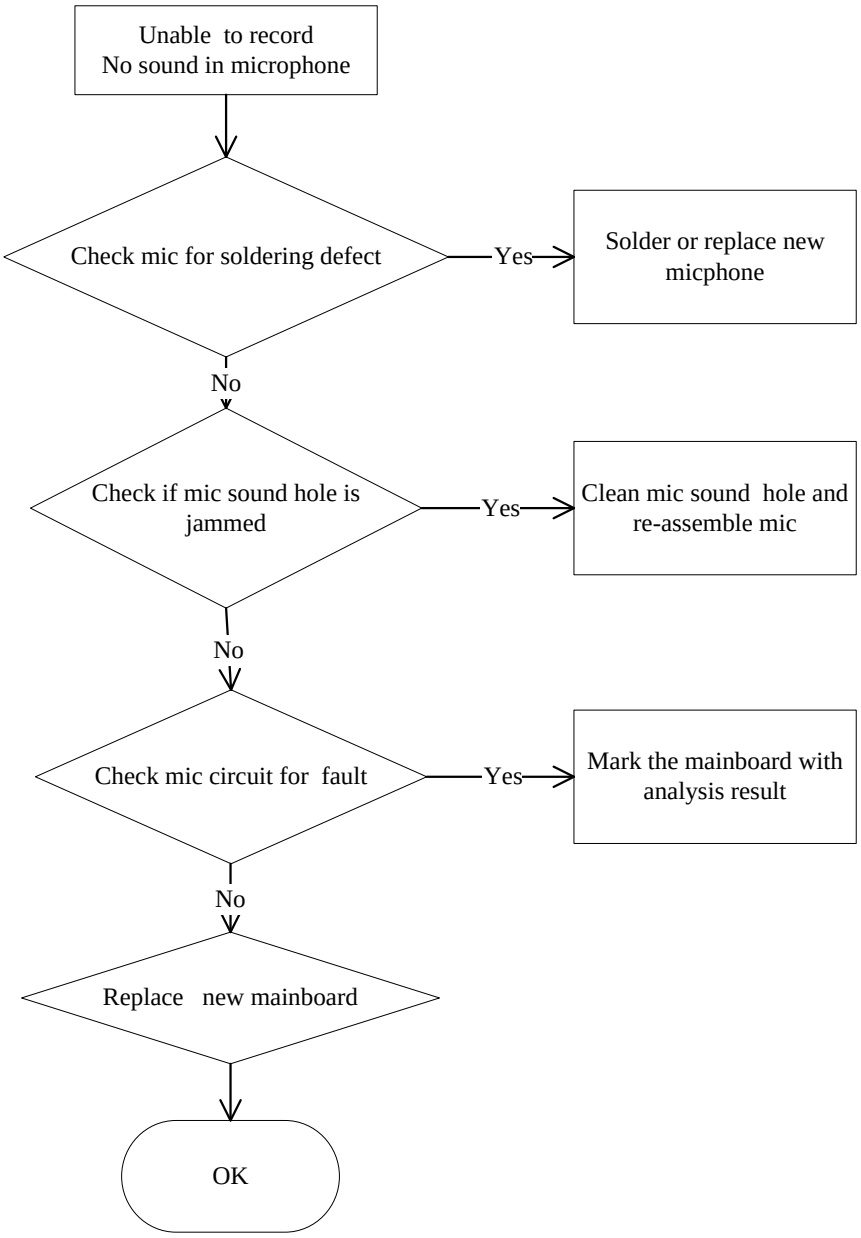
3.5 Camera fault



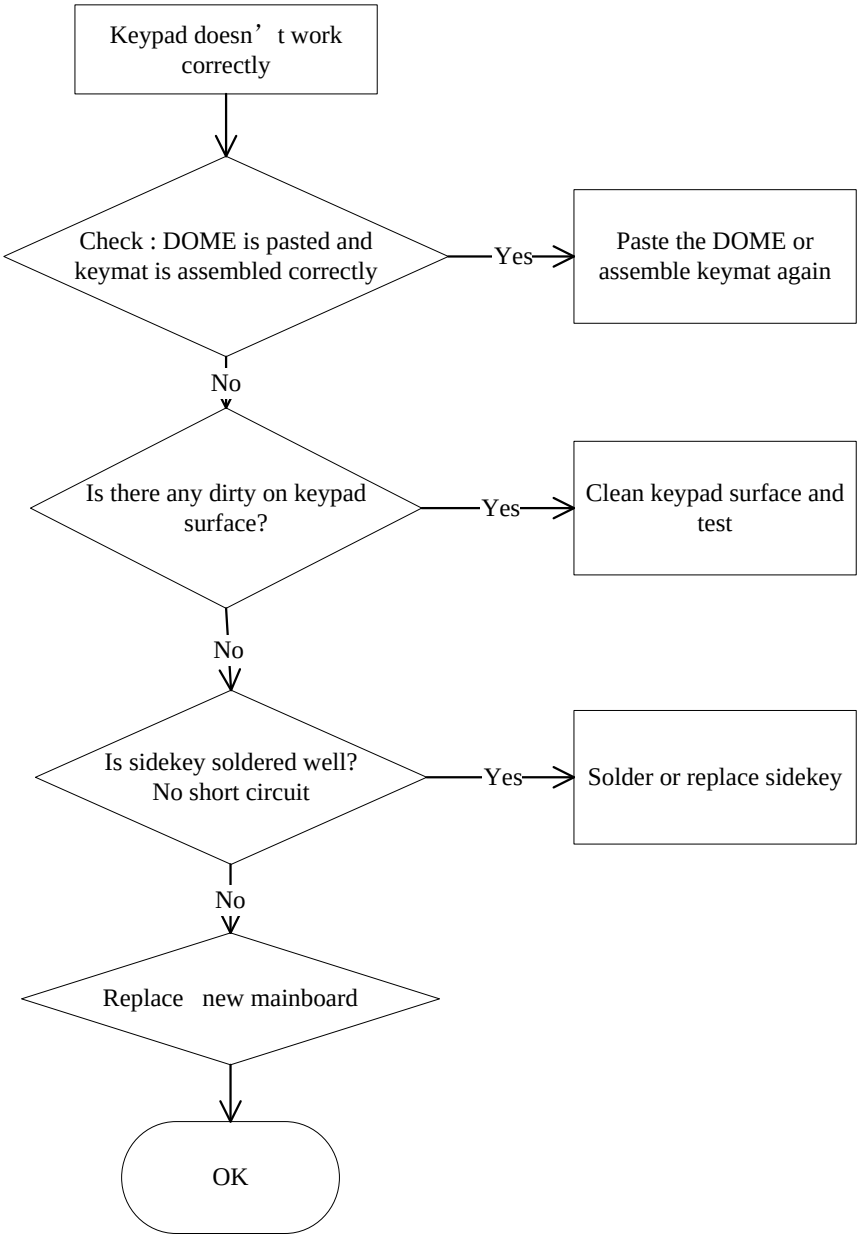
3.6 Fail to identify SIM card



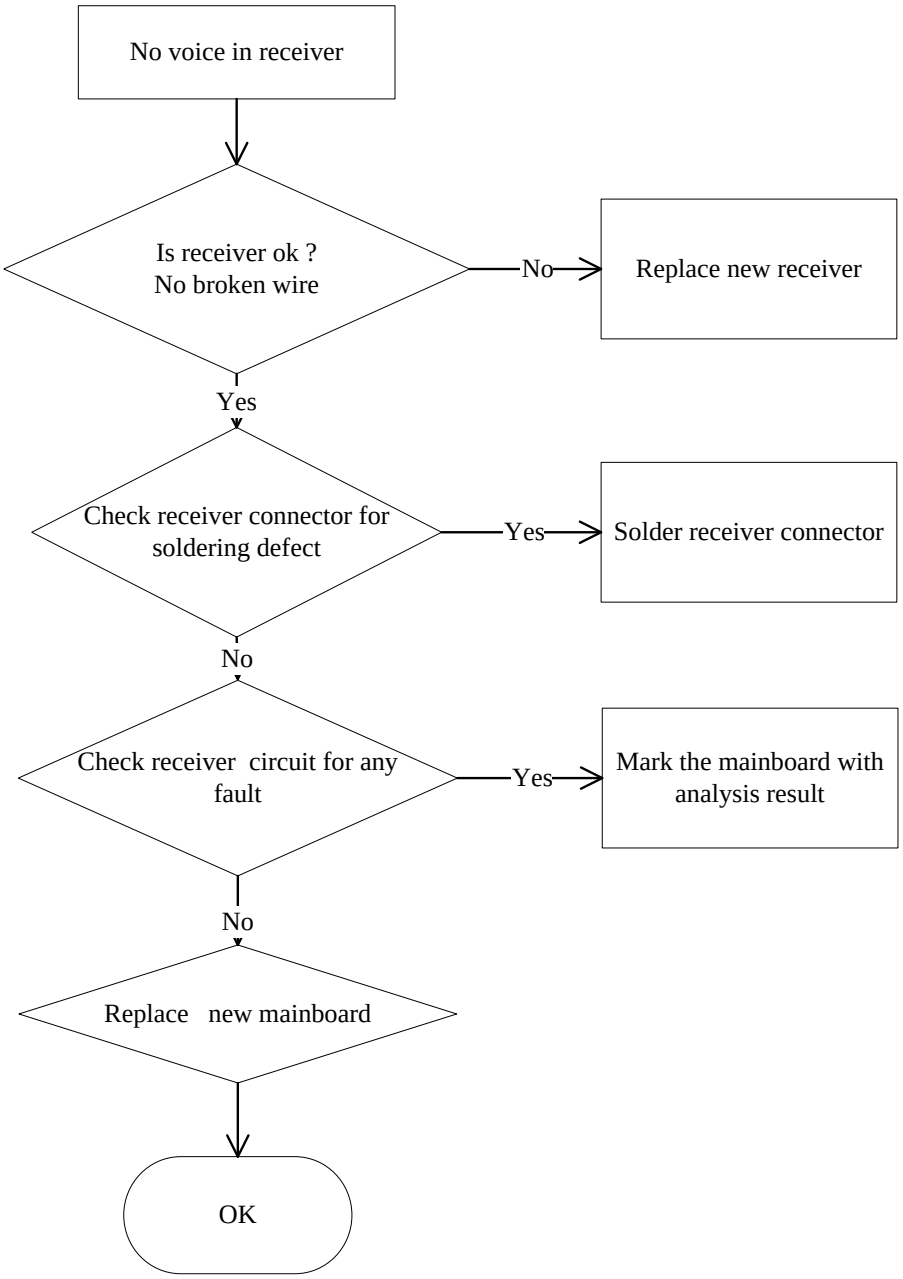
3.7 MIC fault


Unable to record
No sound in microphone
Check mic for soldering defect
Yes
Solder or replace new micphone
No
Check if mic sound hole is jammed
Yes
Clean mic sound hole and re-assemble mic
No
Check mic circuit for fault
Yes
Mark the mainboard with analysis result
No
Replace new mainboard
OK

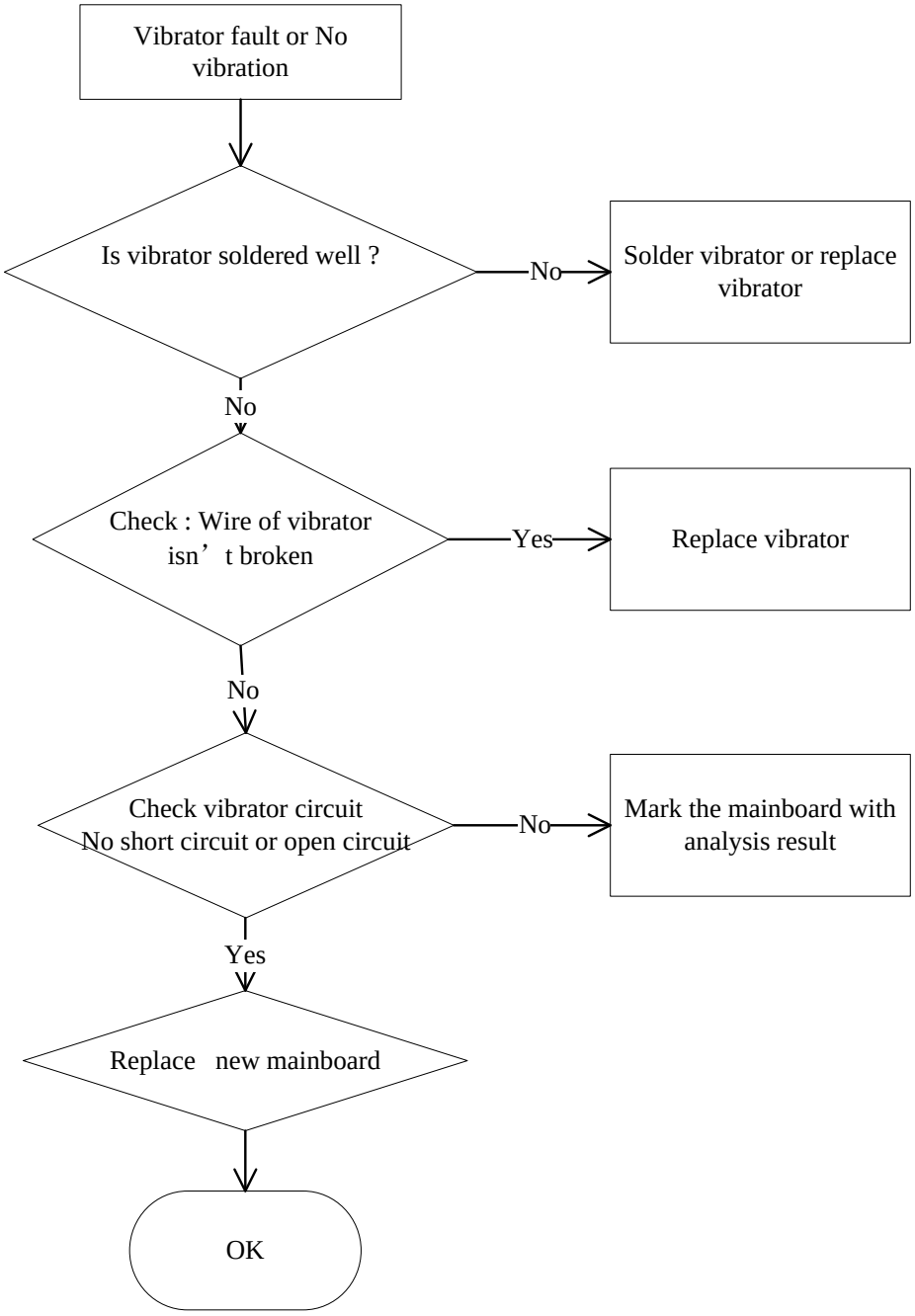
3.8 Keypad fault



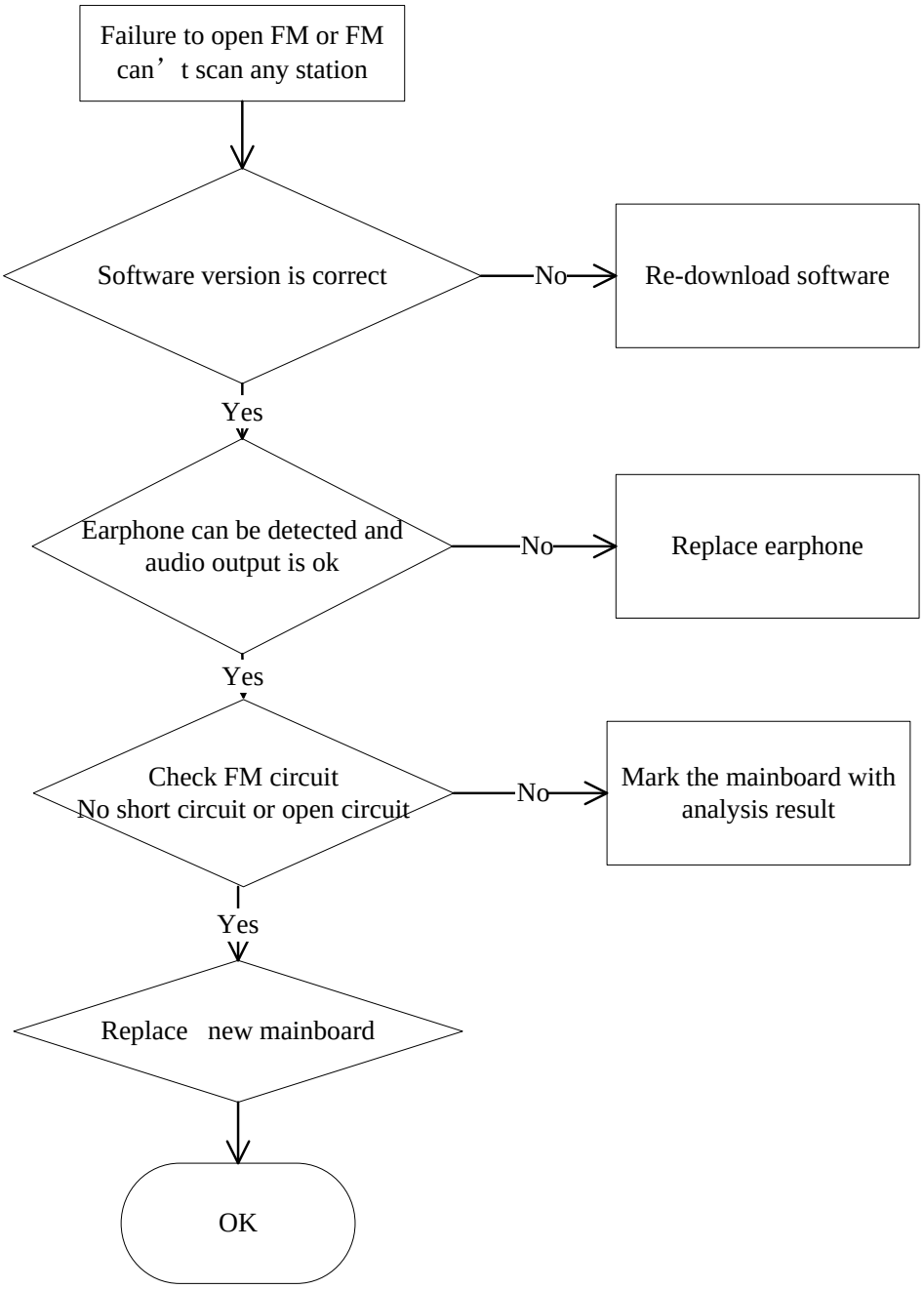
3.9 Receiver fault



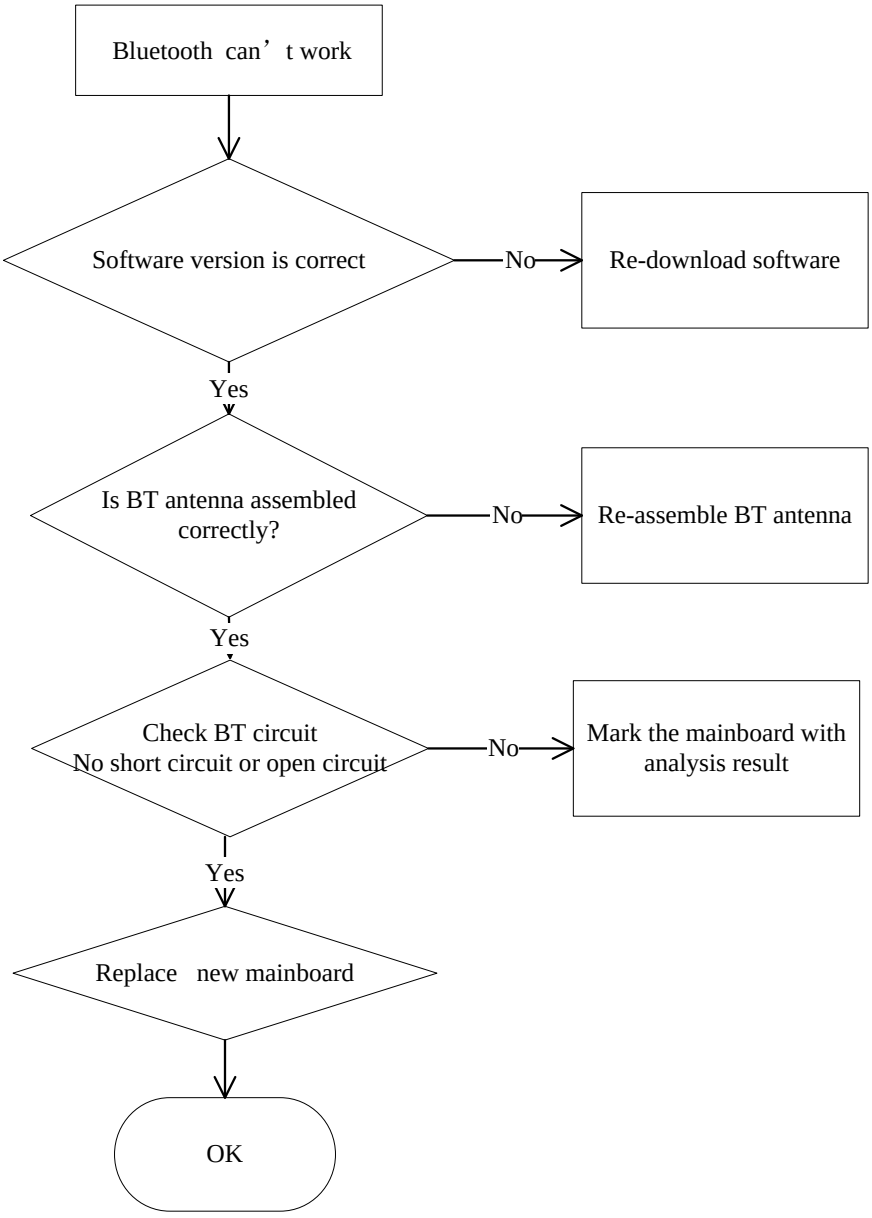
3.10 Vibrate fault



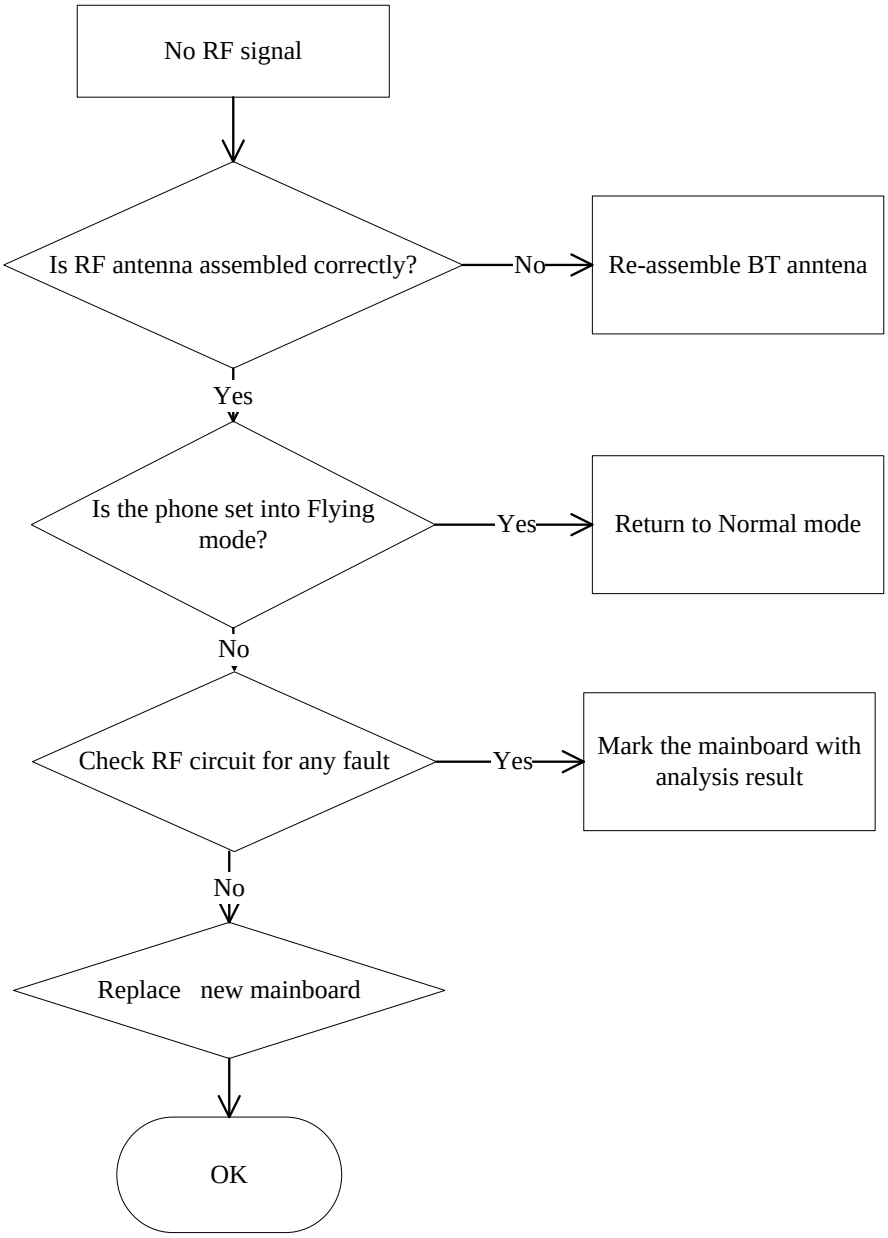
3.11 FM fault


Failure to open FM or FM can’ t scan any station
Software version is correct
No
Re-download software
Yes
Earphone can be detected and audio output is ok
No
Replace earphone
Yes
Check FM circuit No short circuit or open circuit
No
Mark the mainboard with analysis result
Yes
Replace new mainboard
OK

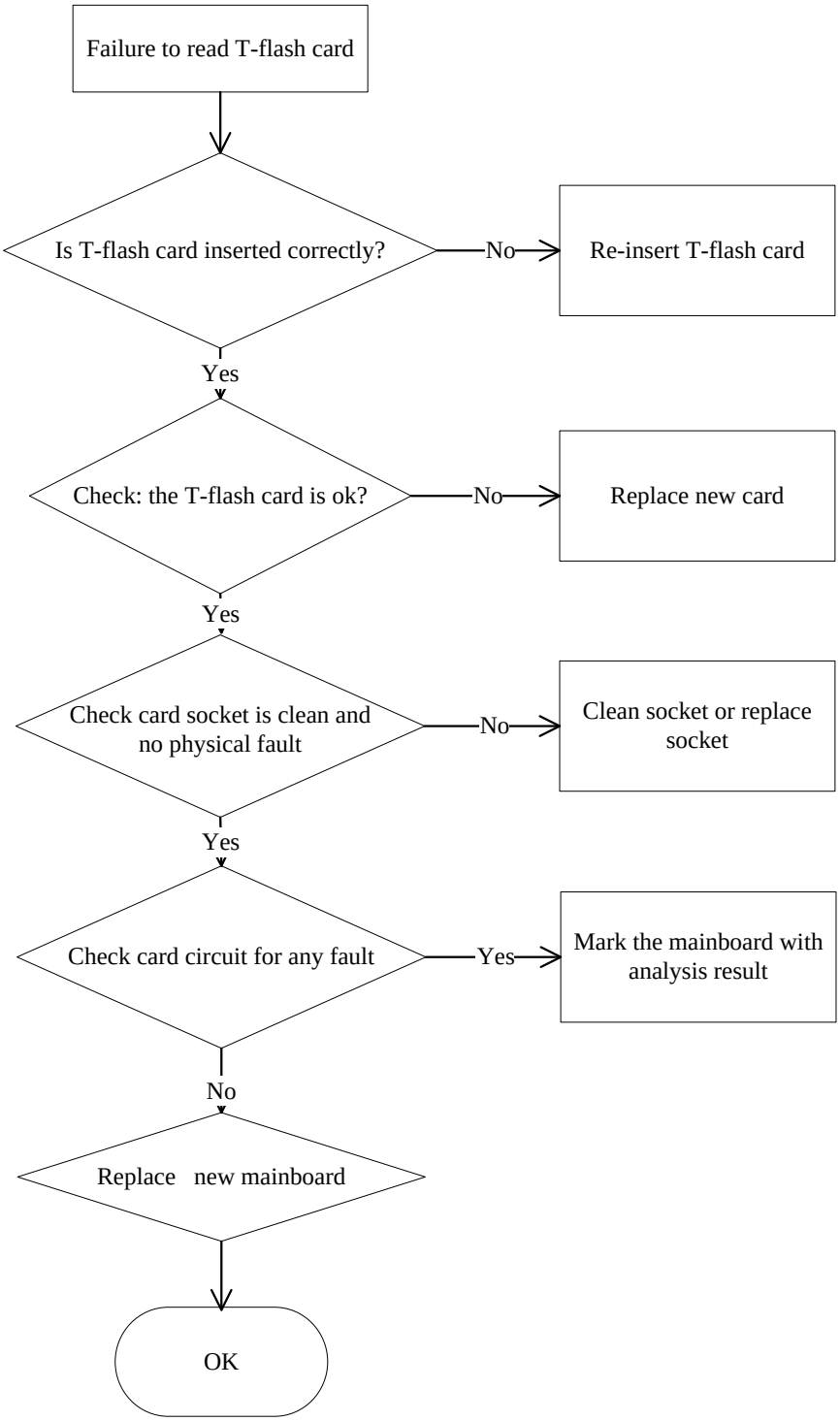
3.12 Bluetooth fault



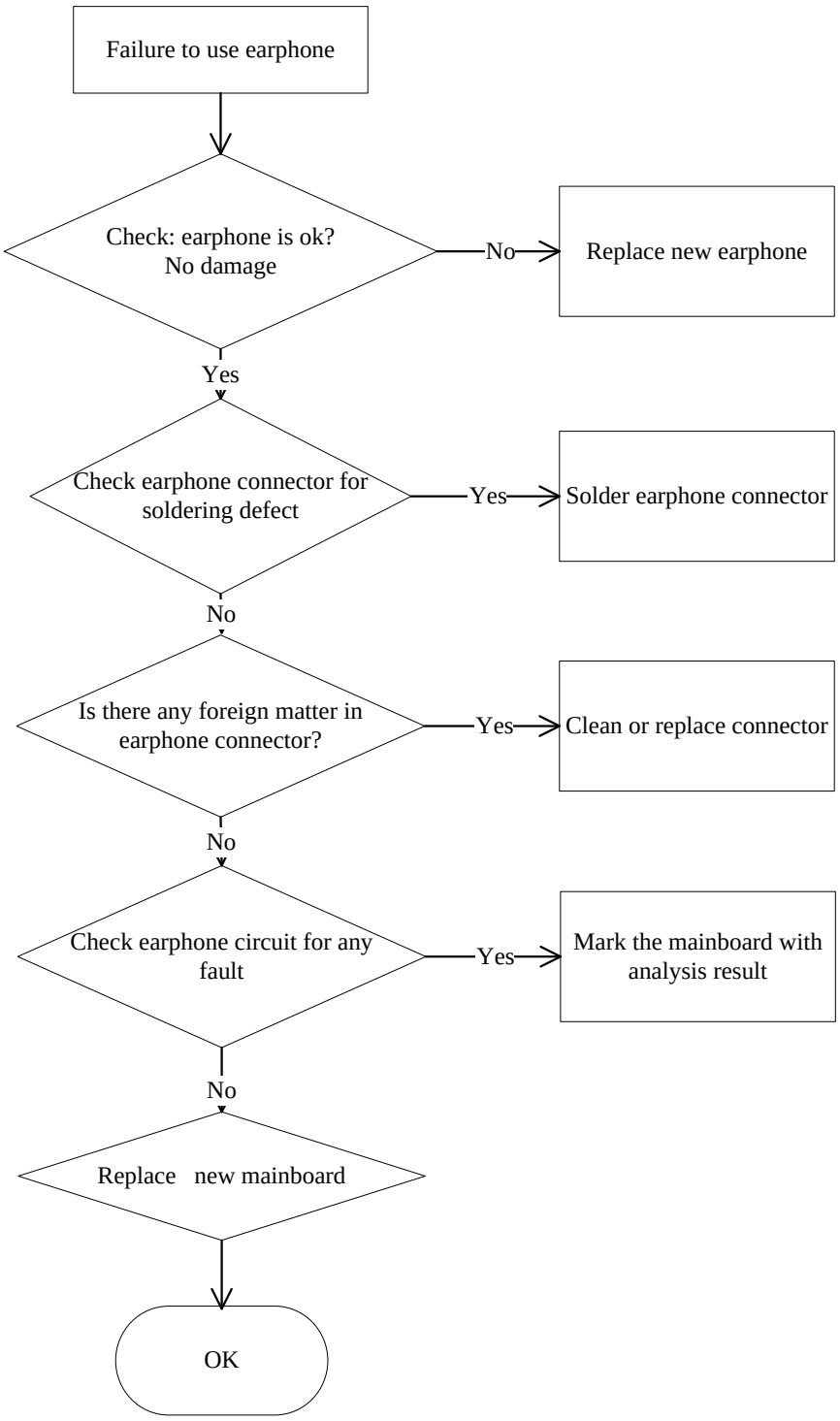
3.14 No signal



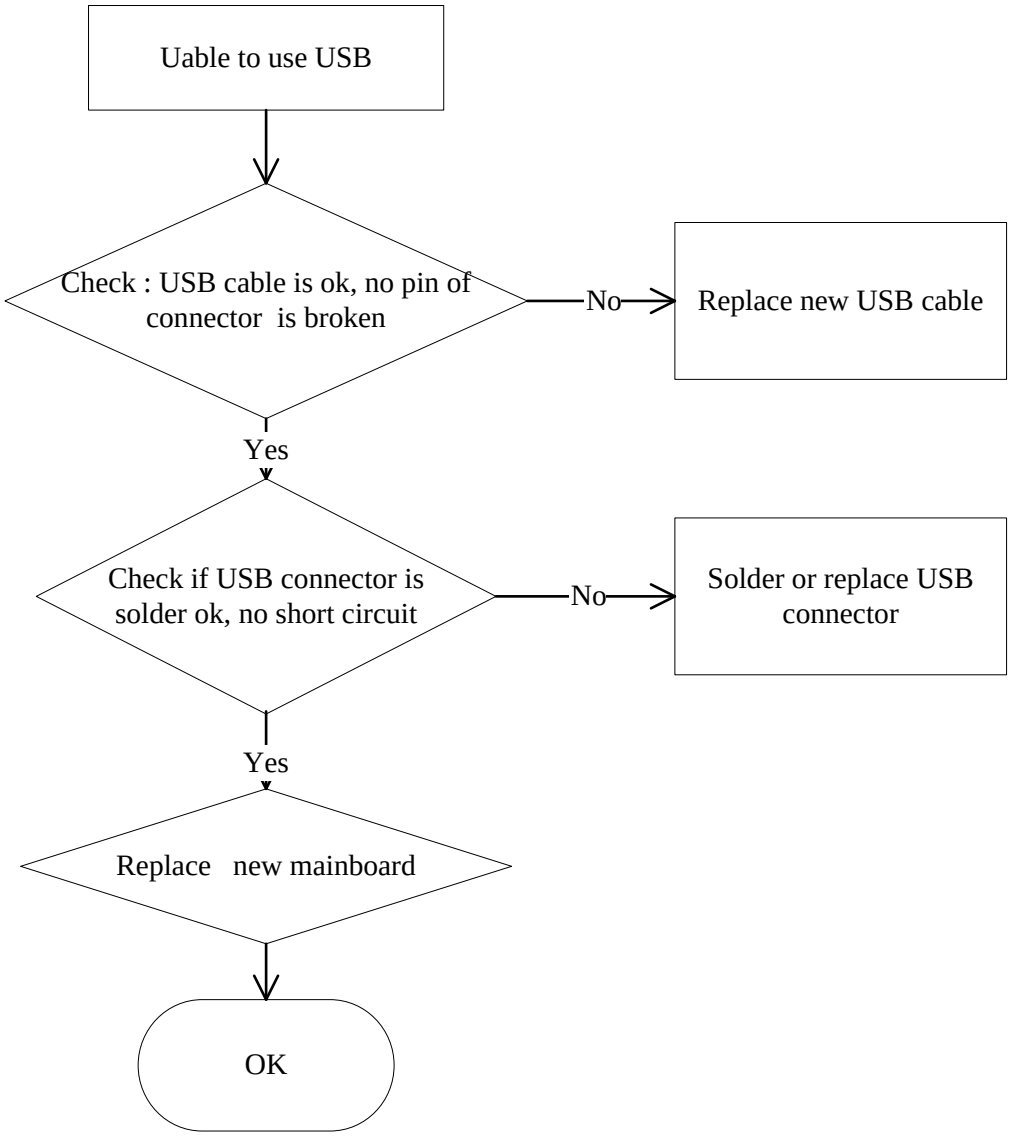
3.15 Failure to identify T-flash card



3.16 Earphone fault



3.17 Unable to use USB



END